

**What is claimed is:**

1                    1.        A method of preparing a quaternary ammonium hydroxide compound  
2        having the formula  $(NR^1R^2R^3R^4)OH$ , wherein  
3                 $R^1$  and  $R^2$  are independently  $C_1$ - $C_4$  alkyl;  
4                 $R^3$  is benzyl or a  $C_1$ - $C_{20}$  alkyl or a  $C_1$ - $C_{20}$  aryl-substituted alkyl;  
5                 $R^4$  is a  $C_8$ - $C_{20}$  alkyl,  
6        the method comprising the step of reacting a quaternary ammonium compound having the  
7        formula  $(NR^1R^2R^3R^4)^+ X^-$ , wherein  $R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are as defined above and X is Br or Cl,  
8        with a metal hydroxide in an aminoalcohol solvent to yield the quaternary ammonium hydroxide.

1                    2.        The method of claim 1, further comprising the step of removing any metal  
2        chloride or metal bromide formed by the reaction of the quaternary ammonium compound and  
3        the metal hydroxide.

1                    3.        The method of claim 1, where the reaction is performed in the absence of  
2        water.

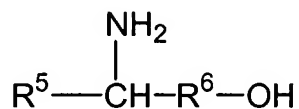
1                    4.        The method of claim 1, wherein any excess metal hydroxide is removed  
2        after the reaction.

1                    5.        The method of claim 1, wherein X is Cl.

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- 1                    6.        The method of claim 1, wherein X is Br.
- 1                    7.        The method of claim 1, wherein R<sup>3</sup> is benzyl or a C<sub>1</sub>-C<sub>20</sub> alkyl.
- 1                    8.        The method of claim 1, wherein R<sup>1</sup> and R<sup>2</sup> are methyl, and R<sup>3</sup> is benzyl.
- 1                    9.        The method of claim 5, wherein R<sup>4</sup> is a C<sub>8</sub>-C<sub>12</sub> alkyl.
- 1                    10.       The method of claim 1, wherein R<sup>1</sup> and R<sup>2</sup> are methyl and R<sup>3</sup> and R<sup>4</sup> are  
2 C<sub>8</sub>-C<sub>12</sub> alkyl.
- 1                    11.       The method of claim 1, wherein R<sup>3</sup> and R<sup>4</sup> are decyl.

- 1                    12.       The method of claim 1, wherein the aminoalcohol has the formula



3 wherein R<sup>5</sup> is hydrogen or a C<sub>1</sub>-C<sub>3</sub> alkyl; R<sup>6</sup> is a bond or a C<sub>1</sub>-C<sub>3</sub> alkyl.

- 1                    13.       The method of claim 12, wherein R<sup>5</sup> is hydrogen or a linear C<sub>1</sub>-C<sub>3</sub> alkyl  
2 and R<sup>6</sup> is a linear C<sub>1</sub>-C<sub>3</sub> alkyl.

- 1                    14.       The method of claim 12, wherein the aminoalcohol has the formula NH<sub>2</sub>-  
2 (CH<sub>2</sub>)<sub>n</sub>-OH, wherein n is an integer from 2 to 6.

15. The method of claim 12, wherein the aminoalcohol is ethanolamine.

16. A method of preparing a quaternary ammonium carbonate having the formula  $(NR^1R^2R^3R^4)_2CO_3$ , wherein

R<sup>1</sup> and R<sup>2</sup> are independently C<sub>1</sub>-C<sub>4</sub> alkyl;

R<sup>3</sup> is a C<sub>1</sub>-C<sub>20</sub> alkyl or a C<sub>1</sub>-C<sub>20</sub> aryl-substituted alkyl;

R<sup>4</sup> is a C<sub>8</sub>-C<sub>20</sub> alkyl,

the method comprising the steps of:

(a) reacting a quaternary ammonium compound having the formula  $(\text{NR}^1\text{R}^2\text{R}^3\text{R}^4)^+ \text{X}^-$ , wherein  $\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$ , and  $\text{R}^4$  are as defined above and  $\text{X}$  is  $\text{Br}$  or  $\text{Cl}$ , with a metal hydroxide in an aminoalcohol solvent to yield a quaternary ammonium hydroxide having the formula  $(\text{NR}^1\text{R}^2\text{R}^3\text{R}^4)\text{OH}$ ; and

(b) reacting the quaternary ammonium hydroxide with a carbonate or bicarbonate source to yield the quaternary ammonium carbonate.